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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,897

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EXAMINER

WILLIAMS, ARUN C

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,897	Applicant(s) HUNTER ET AL.	
	Examiner ARUN WILLIAMS	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-5,7-13,15-22,25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Ouwerkerk, USPAT 5,498,950.**

As for claims 1-3,7-12, 25 and 27 Ouwerkerk discloses and shows in Fig. 2 a battery management apparatus for managing a substring of cells in a string of cells, the apparatus comprising: a power charging lines(31) (applicant's DC bus; electrical vehicle); a decoder and driver circuit(18) (applicant's multiplexer/demultiplexer circuit) operative to selectively couple nodes of the substring of cells that a serially connected to the DC bus;(col.4, lines 12-24); independent controller (not shown)(col.3, line 24) (applicant's DC/DC converter) wherein isolated ports are implied;a sensor circuit (25)coupled to the DC bus; and a controller circuit(14), it is implicit for a communication (electrical) bus to be present in a circuit configuration (col.3, lines 16-62). Furthermore, discloses connecting the plurality of batteries to the sensing modules (19) (col.4, lines 41-46)(cl.7)

As for claims 13,15-17 Ouwekerk discloses when the battery voltage sensing circuit (22) senses the voltage (which also meets applicant's determine a status) of the each of the plurality of batteries and if a certain voltage is detected an order to charge the battery to a proper voltage level is activated. (col.4, lines 33-37).

As for claims 4,5,18-22, Ouwekerk discloses the controller(14) collects data from the outputs of the charge controller and battery balancer (11), state of charge (which meets applicant's determine a status and capacity testing) of each of the batteries (12) wherein impedance testing is implicit for detection of existence of the battery, balancing data and control signals(which meets applicant's generated test data) wherein a response is based on the data (col.5, lines 6-23)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 6,23,24,26 rejected under 35 U.S.C. 103(a) as being unpatentable over Ouwekerk in view of Koenck et al, (Koenck), USPAT 4,709,202.

As for claims 6,23,24, and 26, Ouwekerk differs from the claimed invention because he does not explicitly disclose sensing module, DC/DC converter and control modules are enclosed in a battery compartment, and an analog to digital (A/D) converter.

Koenck discloses and shows in Fig. 1-4 sensor modules (103), DC/DC converter (Fig. 16B, 16-1), control modules (Fig.2,14) in a battery compartment (Fig.4,18). He further teaches an analog to digital converter (Fig.16B,15-11) (col.2, lines 32-43)

Koenck is evidence that ordinary skill in the art would find a reason, suggestion or motivation to have sensing module, DC/DC converter and control modules are enclosed in a battery compartment, and to use an analog to digital (A/D) converter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ouwekerk by having sensing module, DC/DC

converter and control modules are enclosed in a battery compartment, and to use an analog to digital (A/D) converter for advantages such as providing a portable battery powered system with great reliability and useful life (col.1, lines 34-35), as taught by Koenck.

8. Claim 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouwekerk in view of Schmidt et al, (Schmidt), USPAT 5,821,729.

As for claim 14, Ouwekerk differs from the claimed invention because he does not explicitly disclose transferring energy between at least one cell of the substring and the plurality of cells.

Schmidt discloses taking energy from a higher cell and directing (which meets transfer energy) it to a lower cell (col.2, lines 30-51)

Koenck is evidence that ordinary skill in the art would find a reason, suggestion or motivation to transfer energy between at least one cell of the substring and the plurality of cells

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Ouwekerk by transferring energy between at least one cell of the substring and the plurality of cells for advantages such as having the ability to remedy the occurrence of voltage differences among cells (col.2, lines 30-33) , as taught by Schmidt.

Response to Arguments

1. Applicant's arguments filed 3/26/2008 have been fully considered but they are not persuasive.

2. In response to applicants' argument that

I. Even if the independent controller were a DC/DC converter (which Applicants deny), there is no teaching or suggestion that the independent controller is coupled to a control module.

II. Ouwerkerk also fails to disclose or suggest that this "independent controller" is coupled to a common line to which a sensing module is also connected

III. Ouwerkerk ...does not appear to be "operative to transfer energy between the first and second ports to feed and/or drain a battery connected to the common line when in use in accordance with the control signal."

IV. Ouwerkerk that the decoder and driver circuit 18 is "operative to selectively couple nodes of the substring of cells to the DC bus.

3. The examiner respectfully respectfully disagrees and submits,

I. As for element I and II, Ouwerkerk's disclosed independent control (col.3, line 24) is electrically coupled to the control module (Fig.2, 14) and a common line.

Furthermore, Ouwerkerk discloses the use of photovoltaic energy storage (col.5, line 65-67) wherein solar cells (ref's power source, 30) produces direct current, so the independent control of Ouwerkerk is a DC/DC converter.

II. As for element III and IV, the recitation of 'operative to transfer energy between the first and second ports to feed and/or drain a battery connected to the common line when in use in accordance with the control signal and operative to selectively couple nodes of the substring of cells to the DC bus' is only a statement of the inherent properties of the 'decoder and driver circuit'. The structure recited in "Ouwerkerk" is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or

obviousness has been established. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and MPEP 2112.01. Nevertheless, Ouwekerk discloses a decoder and driver circuit(18) (applicant's multiplexer/demultiplexer circuit) operative to selectively couple nodes of the substring of cells that a serially connected to the DC bus(col.4, lines 12-24)

Accordingly, the rejection is still proper and thus maintained.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARUN WILLIAMS whose telephone number is (571)272-9765. The examiner can normally be reached on Mon - Wed, Fri 6:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-23612208. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Arun Williams
Examiner
Art Unit 2838

/A. W./
Examiner, Art Unit 2838

*/Bao Q. Vu/
Primary Examiner, Art Unit 2838
June 17, 2008*